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A DEVELOPMENTAL VOCATIONAL EDUCATION RESEARCH AND TEACHER EDUCATION PROGRAM BASED ON A CLINICAL SCHOOL CONCEPT. FINAL REPORT.

BY- HAINES, PETER G. AND OTHERS
MICHIGAN ST. UNIV., EAST LANSING,COLL. OF EDUC.

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THE PROGRESS OF THE RESEARCH AND DEVELOPMENT (R AND D) PROGRAM IN VOCATIONAL-TECHNICAL EDUCATION DURING THE FIRST 18-MONTH CONTRACT PERIOD IS SUMMARIZED, AND PROJECTIONS ARE MADE REGARDING ITS FUTURE OPERATION. THE R AND D PROGRAM IS ROOTED IN THE CLINICAL APPROACH TO TEACHER EDUCATION AND PROGRAM EXPERIMENTATION. THIS APPROACH UTILIZES THE SCHOOLS AS LABORATORIES FOR CONTROLLED EXPERIMENTATION, AND IT STRESSES LEADERSHIP DEVELOPMENT AND DEVELOPMENT OF DEMONSTRATION SCHOOLS. AMONG THE MAJOR PROJECTS OF THE PROGRAM ARE (1) VOCATIONAL OFFICE BLOCK PROJECT, (2) DISTRIBUTIVE EDUCATION PREPARATORY PROJECT, (3) SHARED TIME PROJECT, (4) RURAL SCHOOLS PROJECT, (5) EVALUATION SYSTEMS IN LOCAL SCHOOLS PROJECT, (6) HOSPITALITY EDUCATION PROJECT, AND (7) VOCATIONAL INTERNSHIP PROJECT. A CONTRACT WITH THE UNITED STATES OFFICE OF EDUCATION PROVIDES FOR CONTINUATION OF ALL MAJOR R AND D PROJECTS FOR AN ADDITIONAL 19 MONTHS (UNTIL JUNE 30, 1968) THE COMPLETION OF SOME AND THE INITIATION OF SEVERAL NEW ONES. THE PROGRAM HAS SPONSORED A NUMBER OF CONFERENCES AND INSTITUTES. A TASK FORCE COMPLETED A STUDY OF NEEDS FOR EXPERIMENTAL PROGRAMS AND TEACHER EDUCATION IN HEALTH OCCUPATIONS. A 4-WEEK NATIONAL INSTITUTE FOR POST-HIGH SCHOOL TEACHERS OF MARKETING AND DISTRIBUTION HAD 35 PARTICIPANTS FROM 20 STATES. THE INITIAL STAGE OF THE R AND D PROGRAM HAS SHOWN THAT IT IS A VIABLE OPERATION AND THAT IT CAN MAKE SIGNIFICANT CONTRIBUTIONS TO THE IMPROVEMENT OF VOCATIONAL TECHNICAL EDUCATION. (ET)

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A DEVELOPMENTAL VOCATIONAL EDUCATION RESEARCH AND TEACHER EDUCATION PROGRAM BASED ON A CLINICAL SCHOOL CONCEPT.

RESEARCH & DEVELOPMENT
PROGRAM IN VOCATIONAL
TECHNICAL EDUCATION
DEPARTMENT OF SECONDARY
EDUCATION & CURRICULUM
COLLEGE OF EDUCATION
MICHIGAN STATE UNIVERSITY
EAST LANSING, MICHIGAN

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This report is a summary of the progress of the Research and Development Program in Vocational-Technical Education during the first 18-month contract period with the Division of Adult and Vocational Research, U.S.O.E. The R&D Program is an entity composed of many individual projects. This report is an over-all view of the entity. Since each project has its own identity, the status of work on the individual projects is reported more fully in the following reports. See inside back cover for instructions for ordering.

PROJECT 201	A Study of A Block-Time Schedule for Teaching Vocational Office Practices	$1.00
PROJECT 301	A Pilot Program Comparing Cooperative and Project Methods of Teaching Distributive Education	$1.00
PROJECT 501	Shared-Time (Dual Enrollment) Concept for Area Vocational Education Programs	$1.00
PROJECT 601	The Development and Demonstration of Unified Vocational Education Programs in Small Rural Area High Schools	$1.00
PROJECT 701	Evaluation Systems for Local Programs of Vocational-Technical Education	$1.00
PROJECT 801	Hospitality Education Curriculum Development Project	$1.00

If further information is desired concerning phases of the R&D Program contact:

Director
Research and Development Program in
Vocational-Technical Education
115 Erickson Hall
Michigan State University
East Lansing, Michigan 48823

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A DEVELOPMENTAL VOCATIONAL EDUCATION RESEARCH AND TEACHER EDUCATION PROGRAM BASED ON A CLINICAL SCHOOL CONCEPT.

A FINAL REPORT OF CONTRACT OE 5-85-111

PERSONNEL

Director

DR. PETER G. HAINES
Professor and Coordinator of Business and Distributive Teacher Education

Assistant Directors

DR. O. DONALD MEADERS
Associate Professor of Agricultural Education

DR. JACOB STERN
Associate Professor of Industrial Education

Administrative Assistant

KARL W. STEARNS
Instructor of Business Education

Research and Development Program
in Vocational-Technical Education
Department of Secondary Education
and Curriculum

COLLEGE OF EDUCATION

Michigan State University
East Lansing, Michigan
1967

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Introduction

In the fall of 1963, the thoughts of a number of vocational education faculty were crystallized into a perceived basic need for a research and development program. Their thinking had originated out of the many independent research projects they had undertaken plus the early reports of the Presidents' Panel of Consultants. The recommendations in the reports were later enacted as the National Vocational Education Act of 1963. The need for a major research and development effort became quite clear.

After nearly a year of faculty discussion and the drafting of a number of position papers the faculty had secured basic agreement, and in March, 1965, submitted a proposal to the United States Office of Education to establish a Center for Research and Development in Vocational-Technical Education at Michigan State University. After subsequent negotiation, a contract was awarded under which Michigan State University would engage in a series of research activities clustered about a clinical concept of program development and teacher education. The R & D Center was envisioned from the first as a major, long-range effort based in principle on the commitment of regular faculty resources to a program of research. The U.S.O.E. contract was a major contribution to this initial basic thrust.

PURPOSE OF THIS REPORT. Work on the initial 18-month program of work began formally in July, 1965 with the appointment of the director of the R & D Program. Thus, this report represents the status of work completed on the original 18-month contract. But, this report serves yet another purpose —communication—internally with the R & D staff, with the administration of Michigan State University, and with other researchers as well as with the associated research personnel in state departments, educational institutions, and local schools which are associated with Michigan State University.

CONTENT OF THIS REPORT. This report contains five major sections:

A. Basis of R & D Program
B. Resume of progress
C. Plans for the future
D. Outcomes of the initial stage
E. Appendices of details involving personnel, advisory council, consultant use, conferences, and contributed costs.

BASIS FOR THE RESEARCH AND DEVELOPMENT PROGRAM

The R & D Program is rooted in what is coming to be known as the clinical approach to teacher education and program experimentation. This approach utilizes the actual conditions of schools as a laboratory in which controlled experimentation may be accomplished. The clinical approach recognizes that theoretical constructs are tried out in the arena of professional practice in local schools while at the same time this try-out and testing is accomplished under controlled conditions. In this way evaluation can rest upon data which is as accurate as possible in a social environment.

The clinical approach also stresses two other aspects. First, leadership can be developed as a concomitant of the involvement of teachers and trainees in the process of program experimentation. Second, schools utilized in the clinical process as sites for experimentation can be used as vehicles of change by locating them as potential demonstration sites.

DESIRED OUTCOMES OF THE R & D PROGRAM. A basic set of goals supported the origin of the R & D Program and are still relevant. Each project leader presumes to be contributing to as many of the following goals as possible:

1. Improving the Research Capability of the Vocational Education Faculty.
2. Developing, Testing, and Disseminating New or Improved Patterns of Instruction for Local Schools.
3. Developing a Supply of Teachers for Emerging Fields of Vocational Instruction.
4. Demonstrating the Values of the Internship as a Teacher Education Vehicle.
5. Uncovering New Knowledge of Teacher Behavior as a Basis for Teacher Education Activities.
6. Developing in Local School Research Associates a Spirit of Adaption to Change.
7. Contributing to the Improvement of the Graduate and Undergraduate Instruction Program in Vocational Teacher Education.
8. Assisting State Departments of Education with the Process of Program Development.
9. Involving University Faculty in Other Disciplines in the Improvement of Vocational Instruction.

SPHERES OF THE R&D OPERATION. Implementation of the original proposal has led to the development of three spheres of operation. These spheres interlock since it is a principle of the R&D program that all component projects shall contribute to the centrality of purpose of the program.

The three spheres of operation are:

1. *Program Experimentation in Clinical Schools.* In this sphere a school becomes a *site* for a clinical investigation. The school classroom becomes a laboratory in which the effect of actual conditions of teaching-learning can be measured.

   Under investigation through the clinical process can be such things as: a method of instruction, an innovative curriculum pattern, a means of evaluation, a unique media of learning, or the behavior of a teacher. Also possible through the clinical site are experimental studies in which a process can be tested under a controlled-experimental design.
2. *Vocational Teacher Education and Personnel Development in Clinical Schools.* In this sphere of operation a school becomes a clinical training ground. Experienced teachers who have leadership potential can participate, under direction, in a pilot program or in other activities. Individuals who have occupational experience, but not teaching credentials, can be placed in the clinical school where they undergo a planned and controlled set of experiences while continuing their professional studies.

   In addition, the teachers who are designated as research associates in curriculum development projects can receive many professional experiences which strengthen their leadership potential.
3. *Basic Research and Allied Teacher Education.* In this third sphere the R&D program undertakes research which undergirds the projects operating in clinical schools or which assists in the accumulation of knowledge generally appropriate to the projects.

   This third sphere also provides a locus for other studies which the R&D staff wish to undertake, for teacher education conferences, institutes, and workshops designed to upgrade teachers and leadership personnel, and for ad hoc task forces dealing with proposals for possible additional research. A major thrust can be made in graduate education by providing selected candidates with research assistance and bringing R&D projects into the professional classroom, especially the graduate seminar.

It can be seen that the total operation of the R&D Program involves more than those projects contained in the original U.S.O.E. proposal and resulting contract. In reality, the R&D Program is a "Center" involving itself with projects funded from different sources and with other activities vital to the total program of vocational teacher education at Michigan State University.

As an official of the Division of Adult and Vocational Research, U.S.O.E., has pointed out with much clarity and insight into the future, a new approach to educational research is needed which takes advantage of research capability including management ability. In this approach, he added, certain major universities which demonstrate full, *permanently committed* support for vocational education need to be designated as major research centers on an *open-ended basis*; that is, a basis where (a) projects can be funded at any time as the center perceives needs and (b) where funds can be placed for use at the discretion of the staff as needs arise.

BASIC PRINCIPLES SUPPORTING THE R&D PROGRAM. The R&D Program has developed according to a set of basic principles which undergird its operation and serve as criteria both for evaluation of the operation and for determining whether additional projects shall be undertaken.

1. *In program development projects the customary state-local relationship in vocational education is to be preserved.* In practice, this means that state staffs are invited to be involved through consultation and through assignment of time to work with project staffs. Clinical school sites are to be selected in concert with state staffs. The outstanding example of this principle in operation occurs in the Vocational Office Education Project wherein state supervisors and teacher educators serve as State Coordinators and State Research Consultants respectively.
2. *Staffing for R&D shall come primarily from the ranks of regular, tenure-ranked faculty at M.S.U. rather than employing a new research staff.* In practice, R&D staff members are members of the regular vocational faculty groups and generally, continue at least part-time on regular faculty teaching load assignments. Some contract researchers are employed temporarily to provide highly specialized research capability.
3. *The R&D Program is an integral part of the activities of the Department of Secondary Education and of the Vocational Faculty assigned to that department.* All regular R&D staff members are also members of vocational faculties. R&D is considered an integral part of the department's program rather than as a separate enterprise.
4. *R&D Projects (present and future) are to contribute*

to the central purposes of the R&D Program. The R&D Program is not viewed at this time as a "holding company" for unrelated research regardless of its importance; however, it does provide certain support services for projects which are related to the overall purposes.

5. *Other states and institutions are involved in consortia where regional or national trials are desired.* These consortia may be cooperative arrangements wherein states contribute their resources or they may be contractual arrangements wherein work is sub-contracted.
6. *Where possible, R&D sub-projects are to involve cooperative arrangements with other units of the College of Education and other departments within the University to utilize fully, specialized knowledges and skills.* As an example of practice, the Food Sales and Service Project involves the School of Hotel, Restaurant, and Institutional Management.
7. *Operation of actual M.S.U. instructional programs including curricula and course offerings is the responsibility of academic departments.* In upholding this principle, the R&D staff suggests and gives leadership to development of new curricula and special seminars and institutes, but the actual offering is the responsibility of the faculty in vocational program areas.

RESUME OF PROGRESS

This section contains a resume of work completed during the original 18-month contract which officially extended from June 1, 1965 to November 30, 1966. Most projects have progressed to the point that future directions can be seen clearly. Likewise, the work thus far accomplished can serve as a measure of the leadership provided by project leaders and as an accurate gauge of the adequacy of the research effort.

The Research and Development Program has progressed very rapidly toward its original goals which were comprehensive in nature. This progress is particularly rewarding to the staff since the R&D Program is basically one of the involvement of people in pilot-demonstration projects and teacher education programs which depend upon the cooperative efforts of research staff, other faculty, state department personnel, other teacher education institutions and local school administrators and teachers. The very nature of this type of research and development program, demands a time investment and a time schedule that is far different from research designs which basically involve data gathering and analysis. Developmental research has a built-in time lag made more complicated by advance planning which considers the need for local schools to schedule courses at least six months prior to the beginning of the academic year. One of the lessons learned thus far is the need for a research and development program to be organized and funded in such a way that long range planning and development are facilitated.

ORGANIZATION. The R&D Program, as is shown in Figure 0.1, is an integral part of the Department of Secondary Education and Curriculum where it has access to full cooperation not only of the entire vocational faculty—office, home economics, industrial, distributive, and agricultural education—but also of the faculty in curriculum, general secondary education, and social foundations. The R & D staff members are assigned to faculty groupings in vocational education and participate in the activities of those groups (see Appendix A).

An advisory council (see Appendix B) was used during the initial year of operation to provide for communication with the administration of the College of Education, with the program coordinators from each vocational faculty, and with other research units of the college. Close liaison is maintained with the director of the Research Coordinating Unit of the Division of Vocational Education, Michigan Department of Education.

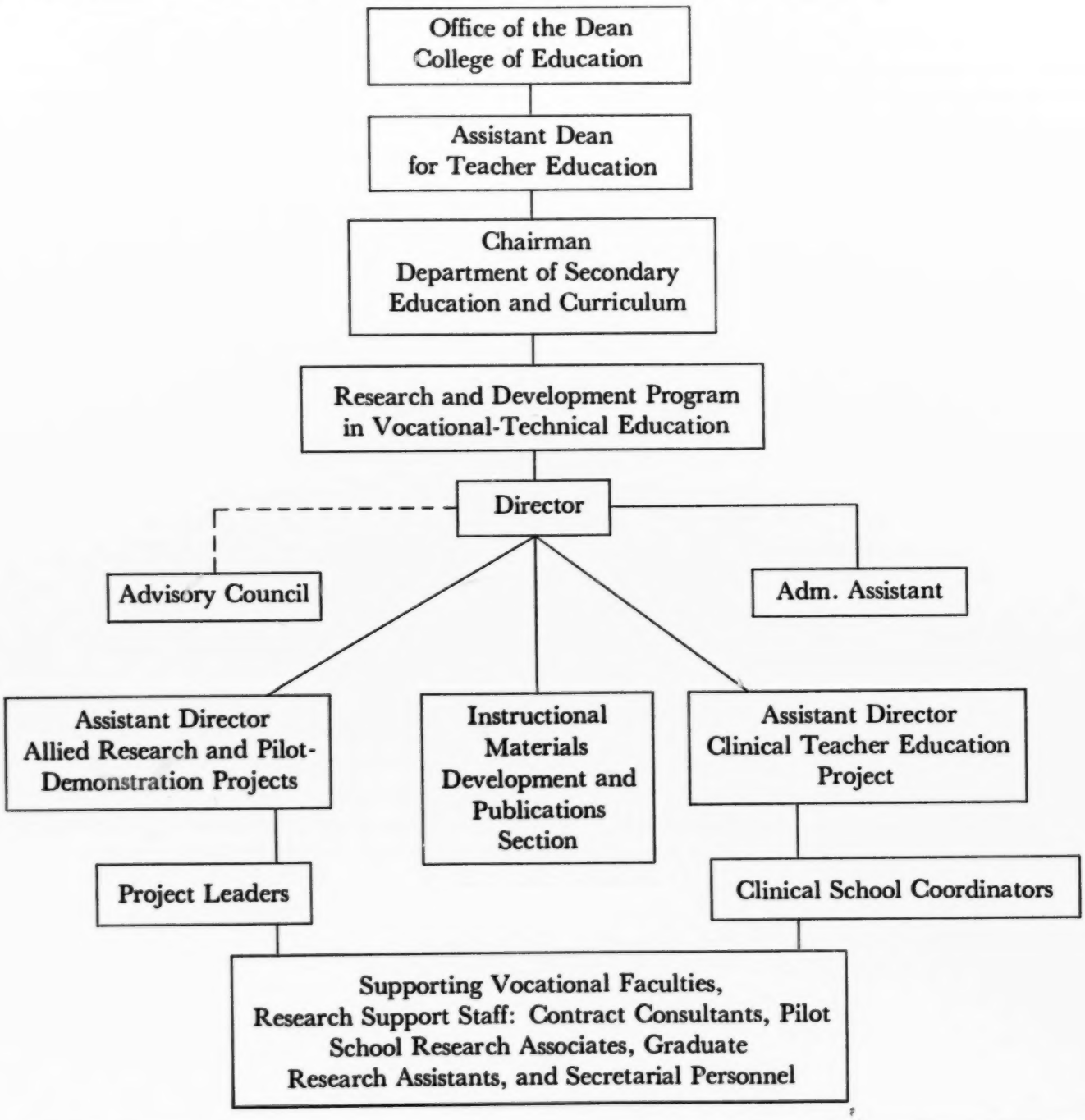
STAFFING. The R&D Program is administered by a faculty member in Business and Distributive Education. An assistant director whose background is in teacher education in agriculture provides leadership to the major areas of operation. In addition, an assistant director from the field of industrial teacher education has responsibility for the Clinical Teacher Education Project.

This heavy time commitment by regular faculty to the administration of R&D illustrates adherence to the principle that research of major stature cannot be a minor fragment of the load of staff with other pressing responsibilities. It also illustrates the principle of maintaining R & D staff responsibilities in the instructional program—teaching, advising, and working with masters and doctoral candidates on theses and individual studies.

A complete list of R&D staff is shown in Appendix A. A glance at that list will demonstrate the involvement in R&D of faculty from all vocational areas as well as the commitment of the department head to the principle that R&D staffing should be primarily made up of regular tenure-

Figure 0.1

Staff Organization For Research And Development Program In Vocational-Technical Education



ranked faculty. In our opinion a major R & D program cannot be effective if it relies upon temporary staffing with non-tenure personnel.

The R & D staff also includes more than 75 research associates who are personnel in clinical schools. This supplementary staffing is a unique feature of the program. These research associates are local teachers. State supervisors, and teacher educators in Michigan and five other states also are involved in the operation of pilot programs and other clinical situations. Their talents and energies represent a very large addition to the research capability of the campus R & D staff, thus multiplying the total research investment many times.

This heavy involvement of local school personnel as research associates also demonstrates the manner

in which the R & D has thus far been able to make not only an impact on local programs but also to provide the environment for leadership training for many experienced teachers. The associate personnel located in the cooperating state departments of education and clinical school districts represent nearly two-fifths of the annual investment of personnel resources in the R & D Program.

PROJECT MANAGEMENT. Each project within the R & D "umbrella" is directly managed by a project leader. Prior to beginning any stage of a project, the leader develops a written plan of operation in descriptive form and follows this with a budget request. The plans and budgets are reviewed by the director and upon necessary modification and approval, an allocation is made. The project leader then operates within this plan and budget making necessary operational decisions.

However, in addition to policies of the R & D Program, project leaders must also operate within the overall policies of the College of Education and the University. Project leaders must seek prior approval for expenditures for activities such as travel and conferences.

This internal control system provides economies of operation, multi-use of service facilities, and security for R & D operations remaining within the policies of the rest of the College of Education.

CONFERENCES AND INSTITUTES HELD. The R & D Program has sponsored a number of conferences and institutes to further both general and specific goals. In general, such conferences have been limited to those closely associated with the development of the projects. Until the projects have progressed to the point where definitive data is available, the staff believes it prudent to limit conferences of general interest. (A detailed list of conferences sponsored is shown in Appendix C.)

A Task Force completed its study in May, 1966, of needs for experimental programs and teacher education in health occupations. The college administration has the report of the task force under study. The task force was chaired by the Director of the Institute for Biology and Medicine and had representation from faculty in home economics, nursing, and industrial relations, as well as personnel from the Michigan Department of Health, State Board of Nursing, and the State Division of Vocational Education.

A National Institute for Post High School Teachers of Marketing and Distribution was held in June and July, 1966. This four-week institute enrolled 35 persons who were selected for their current leadership role as state supervisors of instruction; they represented more than 20 states.

The institute melded instruction in marketing concepts, taught by a professor of marketing, with curriculum investigation, led by a teacher educator. The institute is an example of the kind of teacher education activity which not only can lead to program experimentation and development, but also can team faculty members from the colleges charged with a technical content discipline with those from the discipline of education.

This institute was considered a part of the regular instructional offering of the Department of Secondary Education but was conceived and managed by staff from the R & D Program, thus reducing administrative costs.

INSTRUCTIONAL MATERIALS DEVELOPMENT AND PUBLICATIONS. The most significant support service for the R & D Program is the Instructional Materials Development and Publications Section. Headed by a professor with a distinguished record in vocational education publications, this section has responsibility for:

1. Assisting in planning with project leaders the nature and scope of curriculum materials and reports.
2. Final editing and production of all materials for external use.
3. Development and maintenance of computer based mailing and distribution system.
4. Maintenance of a resource library (presently 1500 items) for use of R & D staff, and others involved in projects of the R & D Program.

As projects mature, the volume of publications is expected to increase significantly. To date approximately 50 different items have been produced. It is anticipated that the next 18-month period will see the production of more than 50 separate titles with an estimated total production of 50,000 items for use by the profession.

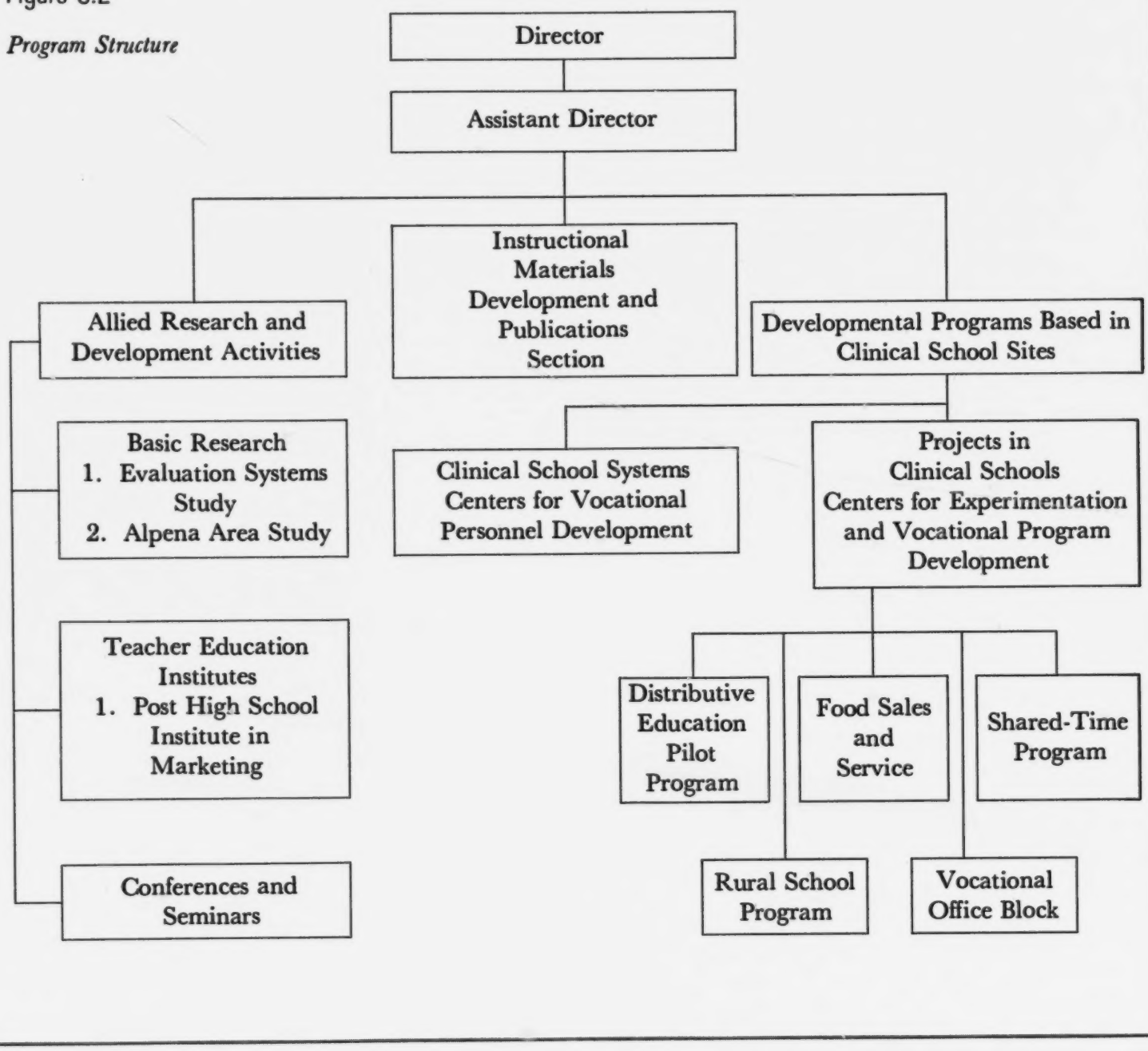
PROJECTS. Currently the R & D Program encompases seven major projects receiving substantial support from the U.S.O.E. contract. In addition, several smaller projects are supported either under contracts with school districts or by College of Education funds.

Each of the seven major projects is reported in detail in other reports in this series; only an overview of status of work of each project is given in this report. However, a few generalizations can be made about the nature of the projects.

1. All curriculum development projects involve local

Figure 0.2

Program Structure


Director
Assistant Director
Instructional Materials Development and Publications Section
Allied Research and Development Activities
Developmental Programs Based in Clinical School Sites
Basic Research
1. Evaluation Systems Study
2. Alpena Area Study
Clinical School Systems Centers for Vocational Personnel Development
Projects in Clinical Schools Centers for Experimentation and Vocational Program Development
Teacher Education Institutes
1. Post High School Institute in Marketing
Distributive Education Pilot Program
Food Sales and Service
Shared-Time Program
Conferences and Seminars
Rural School Program
Vocational Office Block

schools serving as clinical sites. At present more than 75 schools or entire school districts are associated with M.S.U. projects.

2. At each clinical site the classroom teacher in the curriculum development program is designated as a "Research Associate" and has load time specifically set aside for his participation in research activities.
3. All projects of the R & D have been developed in close cooperation with the Vocational Divisions of the State Department of Education and state staff are assigned time to work with M.S.U. project leaders.

Organizational structure for the R & D Program with the various projects and activities identified may be seen in Figure 0.2. The Michigan school Districts participating as clinical sites in one or more of the projects are shown in Table 0.1. These school districts are scattered throughout the entire state but with a concentration in the Detroit metropolitan area (see Figure 0.3) which contains nearly one-half of the entire population of the State.

In the following paragraphs each of six projects will be briefly described. (Copies of final reports—final for the original contract but in reality, interim reports since each has been continued under the present contract—for each of the projects are available as shown on the inside of the back cover of this report.)

Figure 0.3

Counties in which Schools Serving as Clinical Sites are Located

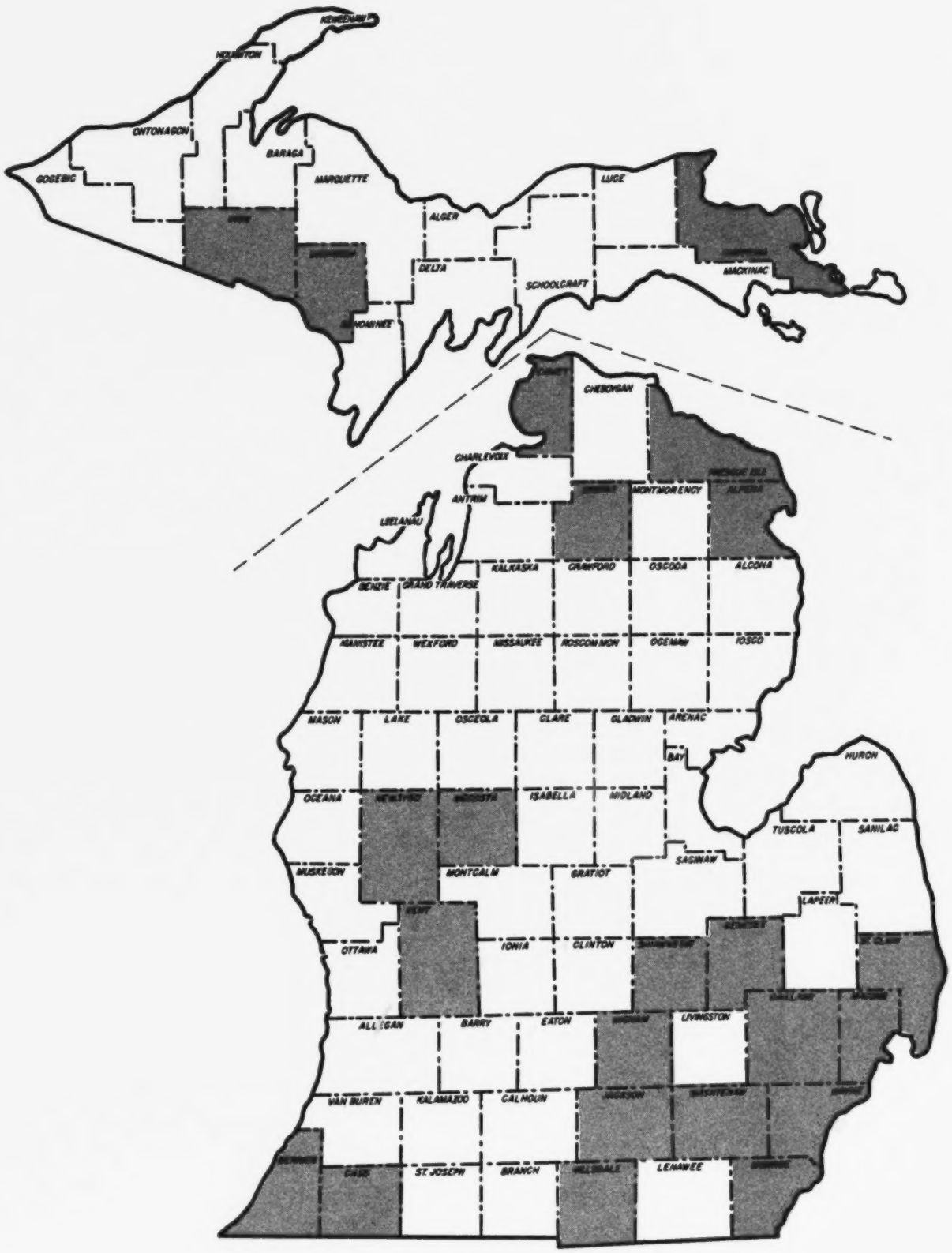


Table 0.1

Michigan School Districts Participating In The Various Projects In The R & D Program, 1966-1967 School Year

SCHOOL DISTRICT	VOB	DEPP	RSP	ESP	HEP	VIP
Algonac					x	
Alpena				x		
Bedford (Temperance)		x				
Benton Harbor		x		x		
Big Rapids				x		
Brandywine	x					
Corunna				x		
Crystal Falls			x			
Edwardsburg		x				
Felch-Channing			x			
Fitzgerald (Warren)		x				
Fremont				x		
Gaylord		x				
Grand Blanc					x	
Grand Rapids	x				x	
Grosse Pointe	x	x				
Highland Park	x	x				
Hillsdale				x		
Inkster		x				
Kenowa Hills (Grand Rapids)					x	
Lakeshore (St. Clair Shores)		x				
Lakeshore (Stevensville)	x					
Lakeview (St. Clair Shores)		x			x	
Lansing	x			x		
Lincoln Park		x				
Monroe		x				
Niles				x		
Onaway			x			
Petoskey	x	x			x	
Romulus		x				
Sault Ste. Marie				x		
Utica		x				
Warren Consolidated (Warren)		x			x	
Warren Woods (Warren)		x				
Waterford Township (Pontiac)				x		x
Willow Run (Ypsilanti)	x					
Wyandotte	x					
TOTAL PROGRAMS	9	17	2	10	7	1

Key to Column Headings:

VOB	Vocational Office Block
DEPP	Distributive Education Preparatory Project
RSP	Rural Schools Project
ESP	Evaluation Systems in Local Schools Project
HEP	Hospitality Education Project
VIP	Vocational Internship Project

Project 201 Project Leader: John McBeth

Vocational Office Block Project

The basic assumption of the Vocational Office Education Project is that the block-time approach is a more effective approach than the traditional single-period approach for teaching the advanced clerical or secretarial subjects. The ultimate objective is improved education for employment in office occupations.

The block-time laboratory approach to vocational office education is an integrated learning experience based whenever possible on a simulated office environmental situation. This program uses two- or three-hour blocks of time in the senior year to provide (1) instruction that builds advanced skills, (2) integrated realistic practice through projects in a simulated office environment, (3) and flexibility to meet individual student learning needs.

The block approach substitutes for the traditional single-period approach of teaching the office skill courses usually offered during the senior year of high school. The project is designed for a basic student enrollment of 16-20 students per class depending on the amount of laboratory equipment and space available.

INSTRUCTIONAL AREAS. A course outline has been developed for each plan and has been distributed to the pilot schools. The major areas of instruction included in the course outlines are:

Shorthand	Small Office Machines
Transcription	Duplicating
Typewriting	Communications
Data Processing	Filing and Records Management
Human Relations	Model Office

Curriculum guides have been prepared for all of the areas except Data Processing and Model Office. Exercises have been developed integrating one area with one or more other areas.

The pilot programs operating this year (66-67) are in five states, Arizona, Florida, Michigan, New Jersey, and Washington, selected for their regional locations and desire to innovate. A project coordinator has been designated at the state level in each of the participating states and serves as a liaison between his state and Michigan State University. A state research consultant from a teacher training institution has been designated in each state. He

is responsible for training and supervising the research associates, consulting services to the project, conducting workshops for research associates within his state, and collecting, evaluating, and reporting data to Michigan State University. The research associate conducts the class in the pilot school. She has a research period to plan for the class and to assist in collecting, evaluating, and reporting data.

Some possible outcomes of the project are:

1. A total job picture simulated within the classroom.
2. Opportunities for closer rapport between students and teachers.
3. More individual counseling.
4. A curriculum which is flexible and adaptable to individual learning rates and previously learned abilities (readiness).

Project 301 Project Leader: Edward Ferguson, Jr.

Distributive Education Preparatory Pilot Project

The Distributive Education Pilot Project is a curriculum development and research project. A central focus has been placed on the use of the project training as the basis for teaching 11th and 12th grade students some of the understandings, skills and attitudes needed for entry into the world of work in distributive occupations.

This project incorporates goals of helping high schools provide an effective program of instruction for students interested in careers in the many distributive occupations.

OBJECTIVES. The developmental objectives of the project include:

1. To develop a curriculum pattern utilizing project training for a two-year distributive education program at the 11th and 12th grade level;
2. To develop, try-out, evaluate and refine instructional materials, curriculum guides, and teacher handbooks;
3. To provide a leadership development program for distributive education teachers to learn to use the project method of instruction;
4. To establish pilot programs of instruction in distributive education with emphasis on project training at the 11th and 12th grade levels.

The research objectives include:

1. To compare the effectiveness of project training with vocational cooperative education for preparing 11th and 12th grade students for distributive and marketing occupations;
2. To evaluate the instructional materials, curriculum guides and teacher handbooks prepared for use by teachers of distributive education classes of 11th and 12th grade students;
3. To evaluate the effectiveness of the leadership development program as a basis for preparing distributive education teachers to use project training in the classes for 11th and 12th grade students;
4. To develop a comprehensive bibliography of professional literature describing the project method and cooperative method through an extensive review and analysis of library reference lists.

In the public schools in the State of Michigan, most of the cooperative training programs in the field of distributive education are carried on only for employed youth in the 12th grade. The establishment of the two-year distributive education program at the 11th and 12th grade levels utilizing the "project method" of instruction is an attempt to expand and extend the opportunities for youth to prepare for careers in distributive occupations.

Preparation of Curriculum Guides. Plans were developed for nine curriculum guides to be prepared. Three of these guides were prepared and in the hands of teachers at the beginning of the classes in September. These included *Employment Orientation, Self-Improvement,* and the *Sales Process.*

Other guides in process, or to be prepared during the first year are as follows: *Product and Service Knowledge, Advertising and Sales Promotion, Merchandising, Mathematics, Distribution in a Free Economy, Sales Supporting Activities,* and *Securing Employment in Distribution.*

THE FUTURE. Plans are being developed for continuation of (a) consultant visits to the pilot schools, (b) one-day workshops for pilot school teachers, (c) completion of curriculum guides, (d) collection and analysis of data, and (e) publication and dissemination of findings.

Requests have been received to expand the tryout of materials and procedures in other states. In addition, consideration is being given to development of a basic vocational education curriculum for distributive jobs to be used with culturally deprived students.

Project 501 Project Leader: Dr. O. Donald Meaders
Shared Time Programs

The shared-time project is designed to contribute to the development and expansion of vocational education programs at the high school level. Such development and expansion should enhance the opportunity for more individuals to enroll in vocational education programs of their choice, regardless of where they live. In addition, such educational development by individuals contributes positively to improvement and expansion in business and industry.

OBJECTIVES. The focus of this project comes through a single question: How can local public schools develop comprehensive programs of vocational education through the utilization of facilities and staff to serve students from more than one high school?

The specific objectives of the shared-time project are:

1. To determine the extent and nature of shared-time vocational education programs in operation throughout the United States.
2. To develop some administrative guidelines for establishing shared-time programs.

DESIGN OF THE PROJECT. The design for the Shared-Time Project provides for data gathering activities, leadership development activities, and dissemination activities. These three kinds of activities are planned to be conducted over a period of approximately 30 months, starting in July 1965, as follows:

1. Data gathering activities
   a. Preparation of an annotated bibliography of literature dealing with the concept of shared-time education.
   b. Identification of shared-time vocational education programs in Michigan and other states; and collection of selected data from the schools, operating the shared-time programs.
   c. Consolidation of data on student and parent aspirations for education and occupations from approximately 3300 11th graders, and 1600 parents of 11th graders from more than 60 schools in rural Michigan.
   d. Case studies of selected schools operating shared-time programs of vocational education in a (1) metropolitan area, (2) rural-urban area, and (3) rural area.
2. Leadership development activities
   a. Workshops for administrators in schools operating or anticipating shared-time vocational programs.
3. Dissemination activities
   a. Publication and distribution of an annotated bibliography of literature dealing with the concept of shared-time in education.
   b. Publication and distribution of a handbook for implementing area vocational education programs in Michigan through use of the shared-time concept.

PROGRESS AND FINDINGS. The term "shared-time" has most frequently been used when referring to arrangements for non-public school students to participate in educational programs conducted by public schools. Frequently, these programs have been at the junior high school and senior high school levels.

A survey was made of the characteristics of and selected practices used by schools conducting area vocational education programs through use of the shared-time concept. Seventy schools throughout the United States reported information about their programs.

A two-day workshop on use of the shared-time concept for developing area vocational education programs was conducted at Michigan State University during July 1966. The workshop was attended by representatives from 17 public high schools, 11 intermediate school districts, five community colleges, in addition to eleven workshop speakers and consultants.

THE FUTURE. Some of the problems associated with the development of area vocational education programs through use of the shared-time concept have been identified through (1) reviews of literature, (2) on-site visitations to schools where such programs are being planned or are in operation, (3) need and feasibility studies for vocational and technical education in given geographical areas, and (4) many other approaches.

The tasks ahead may be identified, briefly, as (1) publication of information which focuses on the shared-time concept for area vocational education programs, and (2) conducting a second workshop for educational leaders concerned with the shared-time concept for area programs.

There will be need for establishment of pilot programs to demonstrate the best known practices for developing, conducting, and evaluating area programs. However, such pilot programs will be beyond the scope of the present project.

In addition, a sub-study is being conducted of the aspirations of 11th graders for occupations and education, and of the aspirations of parents for their 11th graders. This study includes data from 11th graders and their parents in approximately sixty high school districts in rural Michigan. The data will give some insights regarding community factors as well as personal factors to be considered when developing area vocational education programs.

This project is scheduled for completion in December, 1967.

Project 601 Project Leader: Dr. H. Paul Sweany
A Unified Vocational Education Program for Rural Area High Schools

This pilot program seeks to extend the program of vocational education in present high schools by increasing the kinds of occupational education offered in small rural high schools. It seeks to develop a foundation program in vocational education for youth so that they will be prepared for specialized training programs. Since 20 percent of the youth do not complete high school, it is essential that the secondary school program include vocational education courses for all youth not expecting to enroll in post-high or collegiate programs.

OBJECTIVES.

1. To provide high school youth in sparsely populated areas access to unified vocational education programs that are suited to their needs, interests, and abilities.
2. To adapt present and new programs of vocational education to small high schools to make them feasible and of high quality:
   a. by planning vocational education courses appropriate to a group of occupations.
   b. by providing simulated work experiences to offset lack of work stations for supervised work experiences.
   c. by offering a course in the ninth grade designed to explore the fields of work so that careers may be tentatively planned as a basis for choice of courses offered.
3. To upgrade teachers for teaching present and/or new courses of vocational education and/or assisting with educational functions complementary to teaching, such as preparation of curriculum materials, counseling, supervising occupational experience, directing a school placement service and follow-up of graduates and dropouts.

ACCOMPLISHMENTS TO DATE. Three schools are serving as clinical schools to offer pilot programs in Michigan. Workshops for planning the introduction of the course in occupations and career planning have been held. A series of in-service meetings to implement the curriculum study and course revision have been organized. A series of off-campus graduate courses have been established for teachers and administrators to up-grade themselves for offering the programs being developed.

Project 701 Project Leader: Dr. Harold Byram
Evaluation Systems for Local Schools

The evaluation systems project for local schools within the State of Michigan is developmental in nature. It is aimed directly at the further development and trial of a system of evaluation for local programs of vocational education. It is the expressed purpose of this project to maximize the use of local personnel, local resources, consultant leadership, and related professional assistance.

OBJECTIVES.

1. To further try-out and demonstrate a system for the evaluation of vocational education on the local level which originated in the Michigan Project on Evaluation of Local Programs of Vocational Education.
2. To discover and/or devise new or improved procedures for local program evaluation.
3. To establish a working environment in which learning of evaluation procedures for both local school personnel and potential leaders at state and national levels of vocational education can take place.
4. To identify and describe the role of a consultant in program evaluation.
5. To uncover situations that could be considered as potential research and development centers.

DESIGN OF THE PROJECT. This project is designed in such a way as to maximize the values of local school staff and citizen involvement, to place emphasis on goals and outcomes, and to en-

courage the development and implementation of a system for evaluation on a permanent or continuing basis. The broad steps are indicated, but there is a provision for flexibility to supplement and modify these steps and the general procedures so as to adapt them to different sizes and types of local schools.

The following steps constitute the general design of the project.

1. Utilize the research and development staff in an advisory capacity on the project.
2. Select 10 schools to participate in the project. Have a director or leader of the local evaluation project appointed in each of these schools. Provide partial support for one research associate for released time in each school.
3. Hold meetings in individual schools and a meeting of representatives from all prospective participating schools to:
   a. Discuss objectives of the project
   b. Plan for subsequent steps in getting the project underway
   c. Begin identification of areas of concern in local school situations and of possible activities for local evaluation projects.
4. Conduct a workshop for all local directors and research associates from schools cooperating in the project. Utilize the Manual on Evaluation of Local Programs[1]. Employ short-time consultant help for the workshop.
5. Hold conferences in each school as follow-up of the workshop: to help set local project objectives; to develop broad outlines and/or steps in each local project; and to plan for the organization of local school staff and resources for evaluation.
6. Encourage each cooperating school to conduct workshops and/or staff conferences for training of local staffs in evaluation of vocational education programs.
7. Appoint experienced vocational teachers as research assistants to serve in a consultant capacity to these cooperating schools and to assist the state project leader in related activities. Provide intern experiences for these assistants through the project that will help in developing their competencies as leaders in evaluation.
8. Utilize services of specialized consultants from the State Department of Education as needed, and correlate with evaluation of the state program of vocational education.
9. Hold progress report meetings of local directors and research associates.
10. Assemble reports and other data from cooperating schools to determine extent to which practices have been adopted, and with what success, as well as to identify new or improved practices.
11. Analyze records and other data from cooperating schools, and conduct depth interviews to further develop and/or evaluate a generalized procedure or system.
12. Construct the role of consultant on evaluation through analysis of records kept on the evaluation project and through gathering and analyzing related data.

ACCOMPLISHMENTS TO DATE. A general review of the accomplishments leads to the conclusion that through the project there has been a significant start toward:

1. Development of local leadership capability for evaluation of local programs of vocational education.
2. The adaptation to local conditions of a general model of involvement for evaluation.
3. The development of leadership capability for potential state and national leaders in vocational education.

There are variations in the nature of the local projects and progress made in the cooperating schools, as might be expected. The kinds of help given to these schools consists mainly of assistance in the design of the local project plans; formulation of philosophy and objectives for the local project; suggestions on staff and advisory committees; techniques of follow-up and instrumentation; and help with local decisions regarding directions and activities.

THE FUTURE. Short-range and long-range plans have been made. Several activities have already been scheduled for the immediate future.

1. Two more progress report meetings.
2. Consultant visits to schools.
3. Interim-report meetings for three schools.
4. Development of instruments to determine perceptions of local school personnel about the role of consultants.
5. Assembling and analyzing data from the records from local schools.

Long-range plans are being developed around two broad areas. (1) Further replication and try-out and (2) dissemination of information, both within the state and nation.

This project is scheduled for completion in March 1968.

1. Harold M. Byram, "Evaluation of Local Vocational Education Programs - A Manual for Administrators, Teachers and Citizens", Bureau of Research Services, East Lansing, Michigan, College of Education, Michigan State University, 81pp., September 1965.

Project 801 Project Leader: Miss Carolyn Dommer
Home Economics Wage-Earning Occupations

Initiated on January 1, 1966, this project involves curriculum development for Hospitality Education Programs. These programs based in clinical school sites, are established to serve three major functions: provide two years of occupational training for high school youth; develop and test instructional materials and media; and to study approaches to teacher preparation and in-service education.

Training in the two-year programs began in September, 1966 focusing upon food production, sales, and service functions in such hospitality services as restaurants, institutional feeding, cafeterias, catering, and quick-food operations. Training is focused on beginning level occupations in commercial foods. The first year program is scheduled for a minimum of two periods daily, primarily for eleventh grade students. During the second year, at least one semester of supervised work experiences in a commercial establishment will be scheduled in conjunction with related instruction.

First year training programs are being conducted in modified home economics foods laboratories and the school cafeterias. Instruction for the program is provided by the home economics teacher and director of food service assisted by business and distributive education staff, counselors, English and mathematics teachers, and administrators.

Seven Michigan High Schools serve as clinical sites for the developmental programs.

The 1966-67 stage of this project will provide settings in which a base of descriptive information regarding program development can be acquired. The research associates will be involved in providing such descriptive information as characteristics and competencies of students, amount of time devoted to various units, and outlines of units covered. The research associates will also be responsible for developing, trying out, and evaluating instructional materials.

This project is the joint effort of Home Economics Education, Distributive Education, and the School of Hotel, Restaurant, and Institutional Management in cooperation with the Michigan Department of Education and representatives from the Hospitality industry.

Project 901 Project Leader: Dr. Jacob Stern
Professional Internship in Vocational-Technical Education

The Professional Internship Project is designed to utilize the internship approach to prepare professional teachers in vocational-technical education. The purpose of the project is to devise an alternative route to becoming a professional teacher appropriate to persons who possess specialized competence needed in vocational-technical education at secondary and post-secondary levels.

The Professional Internship Project proposes to devise an avenue of appropriate professionalization for persons in business and industry with the specialized competence needed by teachers in vocational-technical programs. In general, the avenue will consist of a program of formal professional preparation, utilizing the existing technical competence of the individual, and leading to the minimum of a baccalaureate degree and full professional status in education.

Important progress has been made on several vital dimensions of this project. Personnel identification, commitment, and stability are pre-conditions for advancing a project of this kind. During June, 1966, an Assistant Director of the R&D Program was added to the regular full-time staff of M.S.U., and placed in charge of the Professional Internship Project. This personnel acquisition is a major step toward crystallizing this project. In addition, a Clinical School Coordinator has been designated for one of the sites for clinical school operation during 1966-67. This Coordinator, who is also a full-time M.S.U. faculty member, and the Assistant Director in charge of this aspect of the R&D Program constitute a functional nucleus around which the total Clinical Teacher Education concept is being developed. In addition, one faculty member in each of the five vocational areas has been identified as a "Vocational Intern Program Advisor".

PROFESSIONAL INTERNSHIP CONCEPT DEVELOPMENT. Since the Clinical School approach to teacher education is a relatively new concept, considerable developmental work must be conducted before the project becomes operational. Investigation, clarification, and definition of the clin-

ical school and its associated internship as these relate to vocational education personnel has been carried on, and noteworthy progress has been made. This work has advanced through formal and informal staff conferences; discussions with personnel from the medical profession, the Learning Systems Institute of M.S.U., and other related agencies; and through library research on the nature of the clinical school approach to teacher education.

The process of developing and refining the clinical school and internship concepts is continuing, and operational definitions are being formulated. These will assist in clarifying the purposes, strategy, and procedures of the Professional Internship Project.

CLINICAL SCHOOL SELECTION. Formal agreement has been reached with the Waterford Township School System to serve as a prime Clinical School setting. In addition to the Waterford Township site, informal agreement has been reached with the Lansing Public Schools as a second Clinical School System. Sites designed for a lesser degree of involvement with R&D have also been identified and formalizing arrangements are in process. Inquiries from a variety of school systems have been received and are being considered for subsequent phases of the Professional Internship Project.

Procedures have been developed for processing and screening applicants for internships. A handbook of internship experiences is being developed. Provision is being made for publicity, and dissemination.. A procedure for relating internship experiences with resident staff competencies has been designed. Conferences have been held with M.S.U. Student Teaching personnel to coordinate their activities with those of the Professional Internship Project. Discussions have been held with personnel from the Michigan Department of Education to expedite and articulate certification procedures for the interns. Arrangements have been made for M.S.U. course credit for various aspects of the intern's activities.

THE FUTURE. The developmental work for the Professional Internship Project must include the design and adoption of appropriate curricula within the University. Such curricula may provide the administrative base for enrollment, advisement, and instruction of future teachers both at the undergraduate and graduate levels.

THE FUTURE

The Research and Development Program is seen by its staff, other vocational faculty, and the administration as a long-range investment in vocational-technical education. The great need for innovative approaches in vocational education, for developing many leadership personnel, for training researchers, for upgrading teachers, and for supplying teachers for emerging fields of instruction, underscore the imperative need for a major R&D operation.

The R&D Program is an on-going endeavor; these first eighteen months constitute but the initial stage in its development. The general plans for the future include the following areas.

CONTINUATION OF PROJECTS. All major projects now underway will continue aided by a substantial U.S.O.E. contract for continuation over a funding period of nineteen months (until June 30, 1968). The curriculum development projects described in the preceding pages will continue to emphasize the "D" phase (development). Much staff effort will be devoted to refinement of curriculum guides and instructional materials for these projects. However, the "R" phase (formal research) will be undertaken in a small way for at least two of these projects with the gathering of descriptive data on student achievement.

It is anticipated that the next nineteen months will see the completion of two projects: Evaluation Systems for Local Programs of Vocational-Technical Education and Shared-Time Programs. Final reports of these projects are expected to be published on or about June 1, 1968.

Several new projects are to be initiated within the next few months: (1) a national seminar in Distributive Teacher Education to develop further understandings of the project method of instruction, (2) a study of the occupational aspirations of Michigan youth, (3) a follow-up study of labor market behavior of cooperative education graduates, and (4) development of an operations handbook for cooperative education teacher-coordinators.

Being developed with the College of Agriculture is a proposal for a major research undertaking in agricultural occupations. The plan calls for a national study of manpower in floriculture (production and distribution), subsequent study of required

competencies, and initiation of a curriculum development project.

In addition, plans call for the R & D to assist doctoral candidates with formulation of proposals intended for submission for small grant funding. In general, these proposals represent "spin-off" research topics from major R & D projects.

THE PERMANENCY OF R&D. The original faculty proposal to establish an R & D Center within the college of education was built upon the premise that the organization would become a permanent part of the structure and program of work of the vocational faculties. The acceptance of this view is but one reason underlying the commitment by the program coordinators of the four vocational faculties and by the head of the Department of Secondary Education and Curriculum of an increasingly large amount of regular staff time funded out of the College of Education's general fund budget allocation. Results thus far from various projects indicate the nature of the contribution that R & D can make to the improvement of vocational-technical education.

In recent months the directors of the R & D have drawn up a plan for establishing a "Program Development Section" within R & D. This section would be composed of a group of regular, tenure-ranked faculty who would be described as "Occupational Research Specialists" and represent the fields of specialization within vocational education. The specialists would be responsible for planning a program of research, developing or sponsoring the development of proposals, coordinating research dissemination activities in their area of specialization and acting as liaison with faculty in their area of vocational education as well as with the state department and professional education and business and trade associations.

OUTCOMES OF THE INITIAL STAGE

The R & D Program came into being quickly and progressed more rapidly than might have been expected from such a major thrust. This rapid development is partly due to the intensive effort devoted by the staff who worked long arduous hours. But, the rapid development is probably more due to the fact that M.S.U. had within one academic department a vocational faculty of more than 18 full-time staff who represented all specialized fields in vocational teacher education. These permanent staff members who had worked closely together, were able quickly to take up their R & D assignments while others of their colleagues made adjustments in their loads to take up the slack.

It is far too early to make definitive statements about the validity of findings from any one project. But, the R & D is a viable operation and the major outcomes of its operation need to be made clear.

IMPACTS ON THE INSTRUCTIONAL PROGRAM AT M.S.U. At Michigan State University the faculty in vocational education and their administrators view as highly important that research endeavors have a direct impact on the undergraduate and graduate instructional programs. In the first eighteen months the R & D activities have shown such impact although the impacts will be more numerous and of more significance as projects develop. As a generalization, R & D projects have added to the instructional program in the following ways:

1. Providing research experiences for doctoral candidates through their assistantships.
2. Providing master's and doctoral candidates with opportunities to investigate selected topics related to projects with resulting papers for courses, seminars, and independent studies.
3. Bringing R & D staff and contractual consultants as resource people and speakers into courses and seminars and in-service meetings and conferences.
4. Introduction of a new doctoral level seminar focusing on Research and Development in Vocational Education.
5. Providing Project Leaders and other research staff, through their experiences with pilot school programs, insights into and case studies of local school practices which, in turn, have been used in the courses they teach.
6. Developing, by R & D staff, instructional materials such as position papers, reports, transparencies, and informational hand-outs which are used in both graduate and under-graduate courses as well as in in-service meetings.

CURRICULUM DEVELOPMENT PATTERNS. The vocational teacher education faculty at Michigan State University have been active in curriculum development for many years. The R & D Program has provided an additional base for concerted development efforts, many of which can be generalized as the School System Approach. The curriculum development projects have provided opportunities to work with school systems to consider problems of administrators, counselors, teachers and students when designing vocational curricula. Involvement

of people from industry, business and other parts of the community, along with professional educators, has provided realistic settings for developmental activities. In addition, the R & D Program has provided opportunities to work with several school systems in a given geographical area for various purposes including curriculum development.

USE OF UNIVERSITY RESOURCES. The R&D Program has assisted materially in pulling together the resources not only of the various vocational teacher education faculties, but it has also resulted in interdisciplinary project development with faculties and research units elsewhere in the University. For example, the Hospitality Industry project has received the full cooperation of the nationally recognized School of Hotel, Restaurant, and Institutional Management. Discussions are in progress with the Learning Systems Institute regarding a cooperative study of teacher behavior, with the Horticulture Department regarding a national manpower study and with the College of Human Medicine regarding health occupations pilot programs.

WORKABLE PROJECT MANAGEMENT SYSTEM. An R & D Program that has national scope and significance presents first of all a formidable task of management. The R & D has developed a *workable internal control system* which permits flexibility of fiscal management to meet needs as they emerge in various projects. This internal control likewise encourages economy and prevents waste by a pre-audit system and by the multi-use of various services, including secretarial and graphics.

The R&D administrative organization has provided a "service center" for many projects and activities. Many techniques have been developed by the R&D administrative personnel in a manner so as to serve more than one project, thus spreading administrative cost and reducing what might be described as the "per-unit" cost. An example is the development of standard memorandums of agreement for pilot school programs.

Experience thus far encourages the staff in the notion that the "management costs" of each project can be reduced through centralization under a major R&D operation. There is also support for the notion that a major R&D program can provide efficiency and economy by serving in project management and "service center" roles for less well-established contractors.

Another example of the support service which the R&D Program has provided is through the computer-based mailing lists. This has facilitated the communications among professional groups regarding the kinds of research being undertaken, and dissemination of the results of research. The costs in terms of time of staff members and secretaries have been greatly reduced for the preparation of various mailings through use of the centralized service.

RESEARCH CAPABILITY AND PERSONNEL DEVELOPMENT. The research capability of the vocational faculty has been strengthened by participation in the R&D Program. All projects except two are led by regular faculty who through their recent experiences have developed greater competence in such aspects of research as design, development of instruments, and research administration. An example of this is found in the interaction among the faculty members, drawing on strengths of each other for proposal writing and program development.

There is evidence that the R & D activities have encouraged competent teachers to seek advance degrees. A number in all fields of vocational education have shown enthusiasm for the professional challenge offered by the research program and the innovations it promises in local curriculum development.

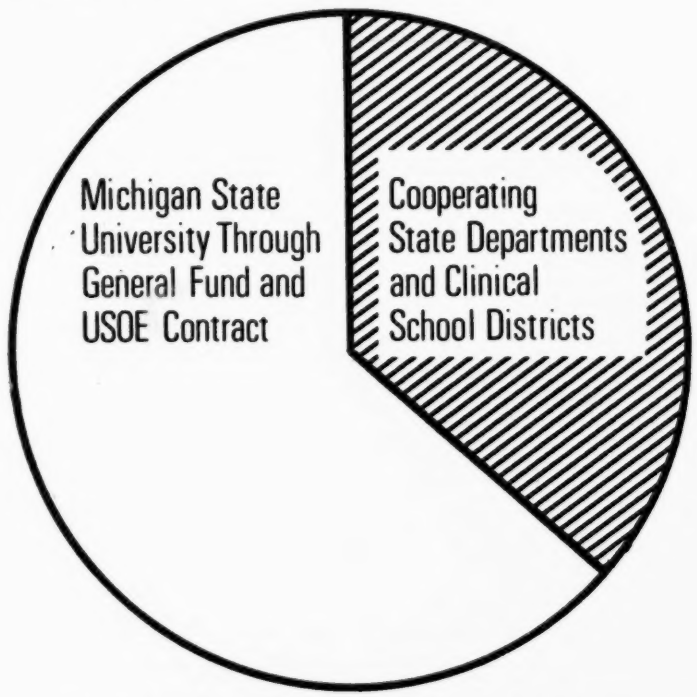
The R&D Program has demonstrated that it can increase the level of satisfaction and security that comes from involvement in research on the part of individual staff members. This is particularly true where inexperienced researchers are used and where researchers, including project leaders, do not possess the terminal degree or have tenure-rank and personal credibility within the institution. By providing a sounding board composed of research administrators and other project leaders, the R&D can provide much assistance.

THE MULTIPLIER EFFECT IN DEMONSTRATION RESEARCH. The thrust of a major R&D Program has resulted in very great multiplication of research funds through the contributions of associated state departments, teacher education institutions, and local schools. The type of approach of the M.S.U. "center" brings about a high degree of involvement, and consequently, a heavy investment in research and development by contributing agencies. For example, the 20 months of the contract covered by this report have resulted in a sharing of investment which includes approximately one-third for cooperating schools and two-thirds

from Michigan State University, United States Office of Education and other sources, as shown in Figure 0.4.

Figure 0.4

Proportionate Annual Investment of Personnel Resources in R&D Projects


Michigan State University Through General Fund and USOE Contract
Cooperating State Departments and Clinical School Districts

Several projects have already resulted in cooperative relationships with other states. For example, the Vocational Office Block Project involved a consortium of state departments, teacher education institutions, and local districts in five states, thus increasing the research capability in those states. Requests are pending from many other states regarding consortium agreements for several of the other projects. There is, thus, a potential form of "multiplier effect" as a result of R & D activities.

PROBLEMS ENCOUNTERED IN DEVELOPMENT OF THE R&D. Aligned with these evidences of research productivity and professional advance have been some troublesome problems which are expected from any large-scale research endeavor.

1. The original contract was written in an unusual manner which has demanded several time-consuming periods of re-writing budgets and renegotiation. The original contract likewise caused uncertainty and delay in decision-making because the contract period over-lapped the fiscal and academic year periods for the university.

   There is no question but that major R&D operations must have a secure contract, one which provides basic approval for 3-5 years even though funding for each fiscal year will require annual review of evidence of successful performance by the contractor.
2. Although new office space was created for the R&D administration, space for housing together some research staff, allied materials production, research data, and research reference collections is inadequate. Space of adequate size and location is essential to facilitate communication among project leaders and develop efficient use of resources. Additional space allocations are anticipated for the fall of 1967.
3. Staffing also presents problems, particularly in the employment of high-competence individuals familiar with research design and evaluation. This problem, of course, is not unique since the research emphasis in American education has apparently out-stripped the supply of experienced researchers.

The months and years ahead will provide an unusual opportunity for vocational teacher educators at Michigan State University to conduct research and developmental programs. The administrative structure for the R&D Program as an integral part of the Department of Secondary Education and Curriculum should facilitate the use of findings from the projects in the undergraduate and graduate courses. The concept of "clinical approach to teacher education and program experimentation" as developed through the R&D Program may provide the theoretical base for revising and expanding the in-service programs for vocational teachers.

Appendix A

FACULTY AND SUPPORT PERSONNEL (AS OF FEBRUARY 1, 1967)

A. R&D Administration and Project Leaders

1. Byram, Harold: Professor (Agricultural Education); Project Leader, Evaluation Systems for Local Schools Project; PhD., 1932, Columbia.
2. Clark, Raymond M.; Professor (Agricultural Education); Project Leader, Instructional Materials Development; EdD., 1952, Michigan State University.
3. Dommer, Carolyn; Instructor (Home Economics Education); Project Leader, Hospitality Education Project; B.S., 1959, Michigan State University.
4. Ferguson, Edward T., Jr.; Instructor (Distributive Education); Project Leader, Distributive Education Preparatory Project; M.S., 1962, State University of New York.

5. Haines, Peter G.; Professor (Business and Distributive Education); Program Director; PhD., 1955, University of Minnesota.
6. McBeth, John H.; Lecturer (Business Education); Project Leader and Curriculum Development Specialist, Vocational Office Block Project; M.S., 1951, University of Alabama.
7. Meaders, O. Donald; Associate Professor; (Agricultural Education); Associate Director, (R & D Program), and Project Leader, Shared-Time Project; EdD., 1957, Michigan State University.
8. Stearns, Karl; Instructor (Business Education); Administrative Assistant; M.A., 1967, Michigan State University.
9. Stern, Jacob; Associate Professor (Industrial Education); Project Leader, Vocational Intern Project; PhD., 1964, Wayne State University.
10. Sweany, Harvey Paul; Professor (Agricultural Education); Project Leader, Rural School Project; PhD., 1949, Purdue University.

B. Associated Staff

1. Gleason, William; Instructor (Agricultural Education); Coordinator, Vocational Intern Project; M.A., 1962, Michigan State University.
2. Poland, Robert; Associate Professor (Business Administration); Research Specialist, Vocational Office Block Project; PhD., 1962, Michigan State University.
3. Uthe, Elaine; Assistant Professor (Business Education); Research Specialist, Vocational Office Block Project; PhD., 1966, University of Minnesota.

C. Research Assistants

1. Acosta, Richard; Graduate Assistant (Hotel and Restaurant Management); Hospitality Education Project; B.S., 1965, Florida State University.
2. Boeck, Robert; Assistant Instructor (Business Education); Evaluation Systems for Local Schools Project; Rural School Project; M.A., 1956, Marquette University.
3. Cain, John; Assistant Instructor (Business Education); Cooperative Education Follow-up Project; M.A., 1960, University of Michigan.
4. Davis, Dwight; Graduate Assistant (Industrial Education); Vocational Intern Project; B.S., 1966, Stout State College.
5. Hannemann, James; Assistant Instructor (Agricultural Education); Instructional Materials Development; M.S., 1965, Cornell University.
6. McKinney, Floyd; Assistant Instructor (Agricultural Education); Evaluation Systems for Local Schools Project; Rural School Project; M.Ed., 1966, University of Missouri.
7. Mellon, William; Assistant Instructor (Educational Administration); Shared-Time Project; M.S., 1966, Michigan State University.
8. Messerschmidt, Dale; Assistant Instructor (Industrial Education); Evaluation Systems for Local Schools Project; Rural School Project; M.A., 1962, Michigan State University.
9. Oen, T. Urban; Assistant Instructor (Agricultural Education); Evaluation Systems for Local Schools Project; Instructional Materials Development; M.S., 1966, Ohio State University.
10. Pearson, Mary Ann; Graduate Assistant (Business Education); Vocational Office Block Project; B.S., 1962, Florida State University.
11. Peterson, Leonard; Assistant Instructor (Business Education); Cooperative Education Follow-up Project; M.A., 1962, Michigan State University.
12. Pettit, Donald; Graduate Assistant (Distributive Education); Distributive Education Preparatory Project; B.A., 1965, Michigan State University.
13. Quilling, Joan; Graduate Assistant (Home Economics Education); Evaluation Systems for Local Schools Project; M.S., 1966, Stout State College.
14. Thomas, Larry; Assistant Instructor (Business Education); Instructional Materials Development; M.A., 1961, Central Michigan University.
15. Thompson, Robert; Graduate Assistant; (Business Education); Vocational Office Block Project; B.S., 1966, Huntington College.
16. West, Dorothy; Assistant Instructor (Home Economics Education); Hospitality Education Project; M.Ed., 1964, Pennsylvania State University.
17. Woolf, William; Graduate Assistant (Distributive Education); Distributive Education Preparatory Project; B.Ed., 1965, University of Alberta.

Appendix B

COLLEGE OF EDUCATION ADVISORY COUNCIL COMPOSITION

1. Gross, Carl H.; Ph.D.; Professor and Chairman, Secondary Education & Curriculum
2. Seay, Maurice; Ph.D., LL.D., Litt. D.; Assistant Dean, School of Advanced Studies.
3. Dean, Leland W.; Ed.D.; Assistant Dean, Teacher Education.
4. Hawley, William B.; M.A.; Assistant Dean, Special Projects.
5. Ward, Ted W.; Ed.D.; Professor and Director; Learning Systems Institute.
6. Borosage, Lawrence; Ph.D.; Professor, Secondary Education and Curriculum — Industrial Education.
7. Byram, Harold M.; Ph.D.; Professor, Secondary Education and Curriculum — Agricultural Education.
8. Shear, Twyla; Ph.D.; Associate Professor, Secondary Education and Curriculum — Home Economics Education.

Appendix C

SUMMARY OF CONFERENCES, WORKSHOPS, AND INSTITUTES HELD BY THE R & D PROGRAM IN FURTHERANCE OF THE GOALS OF THE TOTAL PROGRAM AND ALLIED PROJECTS (8/1/65-1/31/67)

Dates	*Title of Conference and Participants*	*Nature of Conference*
June 26 - July 22, 1966	Institute for Post High School Teachers of Distribution and Marketing; 35 participants.	Upgrade post high school teachers of DE programs and to train new leadership personnel.
Aug. 15 - 26, 1966	Workshop for DE Pilot Project Teachers.	Teacher training on the project method of instruction.
May 6 - 7, 1966	Conference for High School DE Teachers.	Teacher training on project method and teacher upgrading.
Feb. 19 - 22, 1966	Vocational Office Education Conference, State Supervisors & Contract Consultants.	Orientation and presentation of the project. Construction of project design.
June 13 - 17, 1966	National Seminar in Vocational Office Education: State Supervisors; research consultants; research associates, participating in project.	Orientation of Research Associates in the pilot schools. Review, revising, & preparation of instructional materials.
July 19 - 20, 1966	Workshop to Develop Guidelines for Planning and Conducting Shared-Time Vocational Education Programs. Participants were: High School: Superintendents, Principals, Directors of Vocational Education. Intermediate School Districts: Superintendents, Vocational Consultants. Community College: Deans of Vocational-Technical Education, Counselor-Coordinators.	The workshop was designed to draw from the experiences of persons involved in conducting shared-time programs & experts concerned with curriculum, manpower, legal and community factors as a basis for working with educational leaders interested in developing programs of vocational education in Michigan through the use of the shared-time concept.
July 6 - 27, 1966	Summer Institute for Instructors of Hospitality Education Programs.	Prepare teachers and develop materials for pilot programs in hospitality services.
March 31, 1966	Orientation Meeting. 22 representatives from 12 schools invited to participate in project.	To present the design of the project and related information.
May 10 - 13, 1966	Workshop on Evaluation Systems for Programs of Vocational Education in the Public Schools. 19 representatives from 10 schools planning to participate in the project. Also 4 of our 5 consultants from the State Department of Education.	To develop evaluation competencies in local staff members assigned to the project; to assist these persons to make plans for starting and conducting the local evaluation project; to enable MSU staff to gain a better understanding of problems involved in local evaluation; and to provide opportunities to share experience, and plans for mutual benefit.

June 3, 1966	RCU/R & D Orientation Conference for all state staff and vocational teacher educators.	Review of projects and progress of R & D Program and R.C.U.
Aug. 28, 1966	Vocational Intern Program Orientation Conference for Faculty and Administration of Waterford Township District.	Review Goals of Clinical School Project; review operational procedures.
Aug. 22-24, 1966	Orientation for Administrators and Teachers in Pilot Schools.	Orientation to project, development of plans for curriculum materials.
Aug. 21-23, 1966	Rural School Project Workshop Administrators and Teachers in Pilot Schools.	Orientation to project, development of plans for curriculum materials.
October 13-14, 1966	Distributive Education Preparatory Project Conference for research associates.	Review of progress and plans for continuation of project.
December 1-2, 1966	Distributive Education Preparatory Project conference for research associates.	Review of progress and plans for continuation of project.
Nov. 21-23, 1966	Rural School Project Workshop for research associates and administrators.	Review of progress and plans for continuation of project.
October 27, 1966	Evaluation Systems for Local Schools project Workshop.	Review of progress and plans for continuation of project.
Nov. 10-12, 1966	Vocational Intern Project Conference for consultants supervising teachers, and coordinators.	The conference was designed to draw from the experiences of persons involved in conducting intern programs.
Nov. 1-2, 1966	Hospitality Education Project Workshop for research associates.	Review and evaluation of progress and planning for continuation of work.
Nov. 7, 1966	Vocational Office Block Project Workshop for research associates.	Review and evaluation of progress and planning for continuation of work.

Appendix D

CONSULTANTS UTILIZED (8/1/65-1/31/67)

Name	*Institution/Agency*	*Position*	*Project*
College and University Personnel			
1. Dr. Crews, James W.	College of Education University of Florida	Teacher Education	Vocational Office Block
2. Dannenfeldt, Sandra	Northern Arizona University	Teacher Educator	Vocational Office Block
3. Dr. Driska, Robert	Arizona State University	Teacher Educator	Vocational Office Block
4. Dr. Jester, Don	DePaul University	Head, Department of Secretarial Education	Vocational Office Block
5. Dr. Kell, Venetta	Northern Arizona University	Teacher Educator	Vocational Office Block
6. Dr. Marmas, James G.	Saint Cloud State College	Dean, Division of Business	Vocational Office Block
7. Dr. Oliverio, Mary E.	Columbia University	Chairman, Business Education	Vocational Office Block
8. Dr. Perkins, Edward A.	Washington State University	Teacher Educator	Vocational Office Block

9. Dr. Poland, Robert	MSU	Professor, Office Admin.	Vocational Office Block
10. Dr. Stewart, Jeffrey R.	Virginia Poly. Institute	Chairman, Business Education	Vocational Office Block
11. Dr. Wyllie, Eugene D.	Indiana University	Professor, Office Admin.	Vocational Office Block
12. Dr. Moore, Mary V.	MSU	Professor, Office Admin.	Vocational Office Block
13. Dr. West, Leonard	City College of New York	Professor, Educ. Research	Vocational Office Block
14. Kraeer, John	MSU	Professor, Office Admin.	Vocational Office Block
15. Dr. Hereford, Karl	MSU	Professor, Educ. Research	Vocational Office Block
16. Dr. Blackman, Charles	MSU	Professor, Curriculum	Evaluation Systems
17. Dr. Borosage, Lawrence	MSU	Professor, Industrial Educ.	Evaluation Systems
18. Dr. Lorimer, Margaret	MSU	Professor, Evaluation	Evaluation Systems
19. Dr. Shear, Twyla	MSU	Assoc. Prof., Home Ec. Educ.	Evaluation Systems
20. Dr. Suer, John	MSU	Assoc. Prof., School Admin.	Evaluation Systems
21. Dr. Kohrman, George	Western Michigan University	Dean, Vocational Education	Evaluation Systems
22. Dr. Heald, James	MSU	Director, Research	Shared Time
23. Dr. Johnson, George	MSU	Prof., Educational Admin.	Shared Time
24. Lowry, Sheldon	MSU	Extension Specialist	Shared Time
25. Barbour, Henry O.	MSU	Director, School of Hotel, Rest. & Instit. Management	Hospitality Education
26. Gifford, Hilda	City College of San Francisco	Director, project FEAST	Hospitality Education
27. McFadden, Jean	MSU	Instructor, Instit. Admin.	Hospitality Education
28. Dr. Samson, Harland	University of Wisconsin	Professor, Distributive Educ.	Inst. for Post High School Teachers of D.E.
29. Dr. Ashmun, Richard	University of Minnesota	Professor, Distributive Educ.	"
30. Brown, Kay B.	University of Virginia	Professor, Distributive Educ.	Pilot Project in D.E.
31. Brewington, Dianne	Richmond Professional Institute	Teacher Educator, D.E.	Pilot Project in D.E.
32. Dr. Knisely, William	MSU	Director, Institute for Biology and Medicine	Voc. Intern Program
33. Dr. Ward, Ted	MSU	Director, Learning Systems Institute	Voc. Intern Program
34. Dr. Kennedy, Henry	MSU	Director, Student Teaching	Voc. Intern Program
35. Dr. Southworth, Horton	MSU		Voc. Intern Program
36. Dr. Hoffman, James	MSU	Professor, Elementary Intern Program	Voc. Intern Program
37. Dr. O'Brien, John	Rutgers University	Professor, Vocational Educ.	Voc. Intern Program
38. Dr. Bantel, Edward	Wayne State University	Director, Teacher Education	Voc. Intern Program
39. Dr. Drake, William	Cornell University	Prof., Agricultural Educ.	Voc. Intern Program
40. Dr. Maidment, Robert	Northwestern University	Professor, Education	Voc. Intern Program
41. Stone, James	University of California	Professor, Education	Voc. Intern Program
42. Dr. Agan, Raymond	Kansas State University	Professor, Education	Rural School Project
43. Dr. Hull, William	Oklahoma State University	Professor, Agricultural Education	Rural School Project
44. Dr. Stormer, Donald	University of Wisconsin	Prof., Agricultural Educ.	Rural School Project

State Department of Education and Local School Personnel

1. Barron, Allan E.	Roosevelt High School	Department Head	Vocational Office Block
2. Halvas, Earl	State Dept. of Education Michigan	State Supervisor	Vocational Office Block
3. Hiers, Bess	State Dept. of Educ. Florida	State Supervisor	Vocational Office Block
4. Macon, Charles R.	Dept. Voc. Educ., Arizona	State Supervisor	Vocational Office Block
5. Roley, Dennis	State Board for Voc. Educ., Washington	State Supervisor	Vocational Office Block
6. Thomas, Ellis R.	State Dept. of Educ., N. J.	Supervisor	Vocational Office Block
7. Kirk, Beverly	South Mtn. H.S., Ariz.	Teacher	Vocational Office Block
8. Barkley, Joseph	DPE, Florida	Consultant	Vocational Office Block
9. Thorsen, Jack	Mich. Dept. of Education	Div. Voc-Educ.	Evaluation Systems
10. Gaylor, Barbara	Mich. Dept. of Education	Div. Voc-Educ.	Evaluation Systems
11. Miller, Earl	Mich. Dept. of Education	Div. Voc-Educ. Tr. & Ind.	Evaluation Systems
12. Langdon, Charles	Mich. Dept. of Education	Chief, R.C.U.	Evaluation Systems
13. Kerrey, Tom	Mich. Dept. of Educ.	Div. Voc-Educ. Agri.	Evaluation Systems
14. Dr. Alger, Leon	Mich. Dept. of Educ.	Sup. Prog. Dev. Sec.	Shared Time

15. Dr. Thorn, Burton	Waterford Twp. Schools	Director, Voc. Educ.	Shared Time
16. Martin, William	Southeast Indiana Area Voc. Sch., Versailles	Director	Shared Time
17. Clark, Louis	Spec. School Dist. St. Louis County, Mo.	Director Voc-Tech. Educ.	Shared Time
18. Schneider, Rudolph	BOCES, Steuben-Livingston Schuler Counties, N.Y.	Area Director of Voc. Education	Shared Time
19. Slocum, Robert	Ingham Intermediate School District	Voc'l Consultant	Shared Time
20. Erskine, Ed.	Macomb Comm. College	Community Research Coord.	Shared Time
21. Walker, William	Gaylord Public Schools	High School Principal	Shared Time
22. Tumath, Eleanor	Grand Rapids P. Schools	Director, Food Serv. Sup. of Home Econ.	Hospitality Education
23. McCoy, Shirley	Pontiac Public Schools	Director of Food Serv.	Hospitality Education
24. June, Marlene	Penta County Voc. Sch.	Supervisor, Home Ec. Educ.	Hospitality Education
25. Dorr, Eugene	State Dept. of Ariz.	State Supervisor	School Teachers of DE
26. Blue, James	Washington State Board for Voc. Educ.	State Supervisor	School Teachers of DE
27. Linton, Leon	State Dept. of Ohio	State Supervisor	Pilot Project in DE
28. Smith, Joan K.	State Dept. of N. Carolina	State Supervisor	Pilot Project in DE
29. McAlvey, K. Dale	Petoskey Public Schools	Director of Voc. Ed.	Rural School Project
30. Baker, Donald	Onaway Public Schools	Director of Voc. Ed.	Rural School Project
31. Dr. Amberson, Max	Montana State Dept. of Educ.	State Supervisor of Agricultural Ed.	Rural School Project
Other Groups and Agencies			
1. Kerr, William	South-Western Publ. Co.	Editor	Vocational Office Block
2. Kardas, Eleanor	Private	Consultant	Vocational Office Block
3. Reid, Chandos	Livonia, Michigan	Curr. Consultant (Priv.)	Shared-Time
4. Thrun, Mrs. Fred	Law Firm	Consulting Attorney	Shared-Time
5. Duncan, Joseph	Battelle Memorial Inst. Columbus, Ohio	Director, Mich. Manpower Study	Shared-Time
6. Coyle, Helen	Hotel and Restaurant Employees' Union		Hospitality Education

Appendix E

DESCRIPTIVE SUMMARY OF MAJOR CATEGORIES OF R & D EXPENDITURES (June 1, 1965-January 31, 1967 — U.S.O.E. Funds Only)

Personnel:	Includes professional, graduate assistant, and clerical staff salaries charged to program	$116,995
Benefits:	Includes T.I.A.A., retirement and social security attributable to direct personnel costs	4,760
Travel:	Travel costs including fares and subsistence for data gathering, clinical site visitation, program administration in associated conferences	13,910
Supplies and Services	Project materials and service including communications, computer activities, audio/visual and library acquisitions	31,550
Trainee Program Costs:	Personnel development costs for research associates in clinical sites, seminar, conference and workshops expenditures, development, and allowances to clinical schools for released time for research associates	81,400

Final audit data not available at time of publication

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1. VOCATIONAL EDUCATION PUBLICATIONS

			Price
ER-	11	Research on Apprenticeship	$1.25
ER-	16	How High School Cooperative Trainees Fare in the Labor Market-'62	1.25
ER-	23	How High School Cooperative Trainees Fare in the Labor Market, Phase B-'63	2.00
ER-	34	How High School Cooperative Trainees Fare in the Labor Market, Phase C-'64	1.50
ER-	29	How High School Cooperative Trainees Fare in the Labor Market, Phase D-'65	2.00
ES-	11	Industrial Education Needs for the Deckerville Community Schools	1.25
HE-	1	Problems in Personal and Family Living: A Checklist	.50
HE-	2	Manual for Problems in Personal and Family Living	.50
HE-	6	Equipping and Furnishing the Homemaking Department	.50
IE-	6	Agricultural Education in Taiwan: Abstracts of Studies Dealing with Agricultural Education at the Secondary and Collegiate Levels	1.00
IE-	7	Educational & Occupational Attainments of Taiwan Vocational Agriculture Graduates	2.50
IN-	2	A Bibliography for Shared-Time (Dual Enrollment): A Concept for Providing Educational Programs	.50
RR-	1	Twin Cities Technicians	2.00
RR-	5	Vocational Education in Michigan	2.50
RR-	6	Occupational & Educational Plans of High School Students of Vocational Agriculture	1.50
RR-	12	Attitudes & Beliefs about Homemaking &/or Home Economics Education in Michigan Secondary Schools	3.00

2. STUDIES OF LOCAL SCHOOLS

ES-	12	Education for Economic Opportunity (Area Vocational Study)	3.00
ES-	15	Improving Vocational-Technical Education in The Top O'Michigan Area	3.00
ES-	18	Improving Vocational-Technical Education in the Thunder Bay Area	3.25
ES-	19	Planning for Educational Renewal: Hamtramck, Michigan	4.50
OA-	1	School District Reorganization	.50

3. CURRICULUM & INSTRUCTIONAL MATERIALS PUBLICATIONS

			Price
AE-	1	Source Units for the Dairy Enterprise	$1.50
AE-	2	Source Units for the Swine Enterprise	1.50
AE-	3	Source Units for Plant Science	1.50
AE-	4	Source Units for the Beef Enterprise	1.50
AE-	5	Source Units for the Poultry Industry	1.50
AM-	2	Collecting & Preserving Specimens for Use in Teaching Agriculture	.50
AM-	3	Understanding Our Soils	1.25
AG-	5	Farm Mechanics Instruction in Vocational Agriculture	1.00
AM-	4	Forest Trees of the Lake States	1.75
AM-	5	Demonstrations in Dairy	1.25
AM-	6	The Land Laboratory	1.50
AM-	7	Demonstrations in Farm Crops	1.25
AM-	8	Demonstrations in Ornamental Horticulture	1.25
AM-	9	Greenhouse Plant Production	1.50
EP-	6	Preparing Teachers & Instructional Materials for the Food Service Occupations	2.00
ER-	6	Vocational Education: Philosophy & Objectives	1.75
ER-	10	Current Trends & Business Curricula	3.00
ER-	17	Vocational Curricula in Michigan	2.25
ER-	22	Vocational Competencies Needed for Employment in the Feed Industry	2.75
RM-	4	Evaluation of Local Vocational Education Programs	1.50
RR-	15	A Process for Determining Vocational Competencies for the Performance of Nine Essential Activities for Sales Personnel in the Feed Industry, and the Loci at Which the Competencies Could Be Taught	2.75
RR-	16	Vocational Competencies Needed for Employment in the Agricultural Chemical Industry in Michigan	1.00
VE-	1	Case Problems for Office Trainees	.75
VE-	3	A Model Instructional Materials File for Coordinators of Cooperative Occupational Education	.75
VE-	4	A Selected & Annotated Bibliography Related to Cooperative & Project Methods in Distributive Education	1.50

4. RELATED EDUCATIONAL PUBLICATIONS

ED-	1	Role Expectations and the Community School Program	1.25
ER-	1	Explorations in Research Design: Curricula for Technicians	1.50
ER-	2	Role of the Teacher as Seen by Students, Parents and Other Teachers	1.00
OA-	3	Buses and the Schools	.50
RM-	3	Reporting the Results of Your Educational Studies	.25

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The Research and Development Program for Vocational-Technical Education operates within the University's land grant devotion to the unified roles of teaching, research and service. It is part of the department of Secondary Education and Curriculum which has Vocational Teacher Education Programs in Agriculture, Business and Distributive, Home Economics, and Industrial Education. The faculty in the vocational teacher education areas serves as the primary source of staff personnel.